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Possible Collective Effects of Residual Three-Body Forces[1] VLADIMIR ZELEVINSKY, NSCL and Michigan State University, TONY SUMARYADA, ALEXANDER VOLYA, Florida State University — The *ab-initio* calculations for light nuclei show the influence of three-body forces. Here we discuss possible effects of residual three-body forces added to the effective two-body interaction. The well known monopole corrections determined by the single-particle occupation numbers can be interpreted as a result of the mean-field averaging over the third particle. A classification of three-body effective interactions according to angular momentum of participating pairs shows a possibility of less trivial collective effects. The monopole renormalization of pairing can be considered exactly. We give an example of predictions that works for the xenon isotopes and allows one to estimate the typical strength of the effect. We also discuss cubic interactions of collective phonons which may be enhanced due to the three-body contribution. The octupole-quadrupole-octupole vertex is especially interesting leading to strong phonon coupling in agreement with the recent experiments for xenon isotopes [W.F. Mueller *et al.*, in press]. This can also be important for the enhancement of the nuclear Schiff moment in nuclei with soft octupole and quadrupole modes.

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Vladimir Zelevinsky
NSCL and Michigan State University

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